

United States Patent (19) **US 6008151 A**

Sasaki et al. (21) **Patent Number:** **6,008,151**
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NON-MAGNETIC CERAMICS AND CERAMIC MULTILAYER PARTS

FOREIGN PATENT DOCUMENTS

6-243803 9/5/92 Appl. .
10-180208 7/15/98 Japan .

Abstract

The invention provides a nonmagnetic ceramic comprising 5% to 40% by weight of α-quartz and 5% to 60% by weight of borosilicate glass as a matrix, the borosilicate glass having SiO₂ and B₂O₃ contents: SiO₂=70 to 90% by weight and B₂O₃=10 to 30% by weight. Using the nonmagnetic ceramic, multilayer ceramic inductors are obtained. When the ceramic is used as ceramic multilayer parts having an inductor section, it has a low dielectric constant and good characteristics in the high-frequency region, allows for low-temperature firing enabling the use of silver electrodes, prevents chip deformation and crack occurrence upon sintering, and provides a higher mechanical strength.

Claims, 7 Drawing Sheets

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TITLE: Non-magnetic ceramics and ceramic multilayer parts

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Detailed Description Text - DETX (27):

The constructions of respective sections of the multilayer ceramic inductor may be selected from the construction of JP-A 35982/1997 and prior art well-known constructions. For example, the outer shape is approximately rectangular parallelepiped. In most cases, as shown in FIG. 1, the internal conductor 5 is spirally extended within the nonmagnetic ceramic layers 6 to construct an internal winding while opposite ends of the internal conductor 5 are connected to the external electrodes 41 and 45. The winding pattern of the internal conductor 5 is not particularly limited, and the number of turns may be properly selected in accordance with an intended application. The number of turns which can be set herein is usually 1.5 to 15.5 turns. The dimensions of respective sections of the multilayer ceramic inductor are not critical and may be properly determined in accordance with an intended application. The nonmagnetic ceramic layers are about 20 to 100 .mu.m thick. The external electrodes are usually about 10 to 100 .mu.m thick, while the total thickness

L244: (7) ceramic same... | US 6008151 A | Tag: S.T1

Document ID	Issue Date	Pages	Source	Kind Codes
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US 6551426	20030422	13	USPAT	Manuf
US 6388540	20020514	38	USPAT	Distrib
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